WHAT IS CLAIMED IS:

1. A device for automatically detecting at least one fluorescing and/or light-absorbing indicator contained in a liquid service fluid during the process of filling the service fluid into a machine, in particular into the engine of a vehicle, having a filler tube (1) for the service fluid, through which the service fluid to be poured in reaches the machine's service fluid supply (12), a measurement section (2) made of a translucent material which is at least partially filled with or traversed by the flow of the service fluid when filling the same into the filler tube (1), having at least one light source (3), which radiates onto the measurement section (2), an opto-receiver (5), onto which the light (14) impinges that is transmitted through the service fluid when the service fluid flows through the measurement section (2) and/or emanates from the indicator due to a fluorescent effect, and which generates a measurement signal (8, 9) as a function of the intensity of the light (14) impinging on the opto-receiver (5), and having an evaluation unit (10), in which the at least one measurement signal (8, 9) of the opto-receiver (5) is evaluated.

2. The device as recited in claim 1,
wherein the opto-receiver (5) has at least two light sensors (6, 7), whose frequency regions are distinct from one another, and which each generate one measurement signal (8, 9).

3. The device as recited in claim 1 or 2,
wherein the light source (3) and the opto-receiver (5) are oriented to the measurement section (2) and are positioned around the same an angle of 0° to 170°.

4. The device as recited in one of the claims 1 through 3,
wherein, in the direction of flow upstream of the measurement section (2), the filler tube (1) has a reduced cross-sectional area in the section (15) leading into the measurement section (2).

5. The device as recited in one of the claims 1 through 4,
wherein the measurement section (2) is designed as a measuring tube that leads directly or indirectly into the service fluid supply (12).

6. The device as recited in one of the claims 1 through 5,
wherein a plurality of light sources (2) is provided, which radiate in frequency regions that are distinct from one another.

7. The device as recited in claim 6,
wherein the light sources (2) are constituted of LEDs and/or of laser diodes having different wavelengths.

8. A machine, in particular the engine of a vehicle, having a device as recited in one of the preceding claims.

9. A method for automatically detecting at least one fluorescing and/or light-absorbing indicator contained in a liquid service fluid during the process of filling the service fluid into a machine, in particular into the engine of a vehicle, comprising the following steps:

– irradiating the service fluid to be detected during the filling process by at least one light source (3) in a measurement section (2);

– intercepting the light (14), which is transmitted through the service fluid in the measurement section (2) and/or which emanates from the indicator contained in the same due to a fluorescent effect, by an opto-receiver (5), the intensity of the light being influenced by the at least one indicator or the concentration thereof;

– generating at least one measurement signal (8, 9) that is indicative of the intensity of the light impinging on the light-receiving device;

– evaluating the at least one measurement signal (8, 9) in an evaluation unit (10) and comparing it to stored values.

10. The method as recited in claim 9,
wherein the at least one indicator is a fluorescing dye which is excited by the light source (3) in the measurement section (2) to a fluorescent radiation; and the fluorescent radiation constitutes at least one portion of the light intercepted by the opto-receiver (5).

11. The method as recited in claim 9 or 10,
wherein the service fluid contains at least two indicators that are active in different frequency regions, and the indicators, in particular the concentrations thereof, are detected by at least two sensors of the opto-receiver (5) that are sensitive in the different frequency regions.

12. The method as recited in one of the claims 9 through 11,
wherein the measurement signal(s) (8, 9) generated by the opto-receiver (5) correlate with the concentration of the at least one indicator in the service fluid.

13. The method as recited in one of the claims 9 through 12,
wherein one of the indicators of the service fluid forms a reference indicator on whose basis the opto-receiver (5) generates a reference signal (8).

14. The method as recited in claim 13,
wherein the evaluation unit (10) evaluates the at least one measurement signal (9) on the basis of the ratio of the intensity of the at least one measurement signal (9) to the intensity of the reference signal (8).

15. The method as recited in one of claims 9 through 14,
wherein the evaluation unit (10) assigns a quality signal to the at least one measurement signal (8, 9).

16. The method as recited in claim 15,
wherein the quality signal is used for automatically determining the time for the next service fluid replacement.